



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

RECORD OF GEOGRAPHICAL PROGRESS.

AMERICA.

THE MARYLAND GEOLOGICAL SURVEY.—Maryland is now added to the States which have established a State Geological Survey. The General Assembly passed the act in March last. The Survey is under the direction of a commission composed of Governor Lowndes, State Comptroller Graham, President Gilman of Johns Hopkins University, and President Sylvester of the Maryland Agricultural College. The Commission, on March 25, appointed as State Geologist Dr. William Bullock Clark, Professor of Inorganic Geology in Johns Hopkins University. The Survey is planning to take up first the study of certain economic questions, particularly the building stones, in which the coöperation of Professor George P. Merrill, of the United States National Museum, will be engaged. At the same time other subjects, including geological mapping, will be considered, and the students of the Geological Department of Johns Hopkins University will be engaged with the coöperation of outside experts on special points. In this work Professor Clark intends to consider both the coastal plain formations embracing the Cretaceous and Tertiary deposits, as well as the Appalachian formations of the Palæozoic. Investigation upon the crystalline rocks will also be carried on in connection with the work upon the sedimentary series. The purposes of the Survey, as set forth in the Act, are:

- (1.) An examination of the geological formations of the State, with special reference to their economic products, viz., building-stones, clays, ores and other mineral substances.
- (2.) An examination and classification of the soils and a study of their adaptability to particular crops.
- (3.) An examination of the physical features of the State with reference to their practical bearing upon the occupations of the people.
- (4.) The preparation of special geological and economic maps to illustrate the resources of the State.
- (5.) The preparation of special reports, with necessary illustrations and maps, which shall embrace both a general and detailed description of the geology and natural resources of the State.
- (6.) The consideration of such other scientific and economic questions as in the judgment of the commissioners shall be deemed of value to the people of the State.

THE UTMOST SOURCE OF THE MISSOURI RIVER.—Mr. J. V. Brower, whose researches at the headwaters of the Mississippi are

well known, returned in June this year to the head sources of the Missouri River to complete the explorations which he conducted there in 1895. He intends to make a detailed survey of the sources of the Missouri for a final chart to replace the provisional map that appears in his book, "The Missouri River and its Utmost Source," just published. He expects that it will require ten months to complete the work. He ascertained last year that the largest upper branch of the Missouri does not flow through the lower Red Rock Lake in Montana as was supposed, but issues from a cavity of volcanic origin, at the summit of the Rocky Mountains, west of Henry's Lake, Idaho, and just across the boundary between that State and Montana. According to his observations, this ultimate source of the Missouri is in $44^{\circ} 35'$ N. latitude and $111^{\circ} 38'$ W. longitude, and is distant 2,945 miles from the mouth of the Missouri and 4,221 miles from the Gulf of Mexico. The elevation above mean sea level is about 8,000 feet. Mr. Brower started from St. Paul on his journey to the Missouri's sources on July 28, 1895, and the following statement of his work is condensed from his new book.

Passing through Helena, Mont., he went south to Lima in the same State, a little town in the valley of the Missouri about ten miles above the red butte from which the river at this point takes its name (Red Rock Creek). In order to identify the headwater branch of the Missouri it was necessary to determine the relative importance of all the larger, upper branches and this work occupied from Aug. 6 to Aug. 28, leading to the conclusion that the stream flowing through Culver's Cañon into the so-called Red Rock Creek which, lower down, is known as the Missouri, was, probably, the ultimate source of the great river. On Aug. 29, therefore, Mr. Brower re-entered Culver's Cañon, whose exploration he had begun on Aug. 5.

His party advanced with much difficulty up the cañon, as ledges, declivities and fallen timber constantly impeded the way. The summit of the Rocky Mountain range towards which they were struggling was in full view. Following the stream, the party finally arrived at a small flat, of a marshy nature, at the west end of which is a little body of water which Mr. Brower named Lillian Lake. The stream does not run through it. A short distance beyond Lillian Lake, Mr. Brower suddenly came in full view of a hole in the summit of the Rocky Mountains, just west of the crest of the main range. Circled around are numerous peaks.

"From this Hole in the Rocky Mountains," writes Mr. Brower,

“the little rivulet, two feet wide and scarcely two inches in depth, drawing its utmost supply from the uplifts surrounding it, takes its course out into and down through Culver's Cañon to the valleys below, broadening, deepening and strengthening from the base of adjacent and enormous ranges on every hand, until its turbulent waters, severing the mountains and channeling the valleys, open the gate to an issue in the parent ocean, thousands of miles away, by the longest continuous and uninterrupted river channel known to the world.”

Mr. Brower believes that his work is the first discovery of the utmost limit of the channel of the Missouri River, but if any legitimate record exists of an earlier geographical exploration of the locality he and his companion (Mr. Culver) will cheerfully yield the honor of a first discovery.

GEOGRAPHICAL RESULTS OF THE GEOLOGICAL SURVEY OF CANADA IN 1895.—A summary Report of the Geological Survey of Canada for 1895, by Dr. George M. Dawson, Director, has been published (Ottawa, 1896). While geographical exploration was not so prominent a feature of the work as in 1894, some geographical results of importance were attained. In the northern part of Quebec province Dr. R. Bell crossed the height of land from Grand Lake, near the sources of the Ottawa, and descended the Nottaway (Noddawai) River to its mouth at the southern end of James Bay. The country he crossed was comparatively near to the inhabited parts of Quebec, but much of it had not been mapped, and it was uncertain whether the river that took its rise near Grand Lake was a part of the Nottaway system, or was included in a more western fluvial system. Dr. Bell met here a large area of Huronian rocks. It is the rocks of the Huronian system which contain the auriferous quartz veins in the Rainy River and Thunder Bay districts of western Ontario, where Mr. W. McInnes has just collected the information needed to produce the Seine River and Shebandowan map sheets which will facilitate the work of miners who are seeking gold. Typical Huronian areas are also found in the neighborhood of Lakes Temiscaming and Nipissing and the adjacent Sudbury district. The latter is well known for its nickeliferous pyrrhotites, and this metal is being found in the Huronian areas above referred to.

Systematic surveys of both sides of the lower Ottawa were continued by Dr. R. W. Ellis, and in the region between the Ottawa and the St. Lawrence, and their geological features in some detail are now being laid down on a scale of four miles to the inch.

Mr. A. P. Low continued his explorations in the Labrador peninsula. He ascended to the sources of the Manikugan River and examined the country on both sides of the main water-shed there. Granites, Laurentian gneisses and limestones, with intrusive anorthosite, characterize the whole region he traversed.

Mr. J. B. Tyrrell carried out exploratory surveys northeast of Lake Winnipeg in Manitoba, mapping the courses of several rivers and locating the positions of a number of lakes. Granitic and gneissic rocks characterize the whole of this district.

The work of the survey was largely devoted to the mapping of definite areas, particularly some of those which are deriving special interest on account of their metalliferous resources, such as the West Kootanie district of British Columbia, into which a large mining population is gathering where there were no white inhabitants a few years ago. Thus, Mr. R. G. McConnell has been engaged upon the geographical, topographical and geological data needed for the West Kootanie sheet of the geological map, Mr. J. McEvoy has been working upon the Shuswap (British Columbia) sheet, Mr. H. Fletcher has been revising the maps of the Sydney coal fields of Cape Breton, Nova Scotia, and Mr. E. R. Faribault has continued his mapping of the Cambrian gold-bearing rocks of the Atlantic coast on a scale of one mile to the inch.

This mapping, not being based upon detailed and precise topographic surveys, of course necessitates considerable geographical work in the way of measurements, traverses of country and so on, and thus far adds to geography. The resulting maps are not products of the greatest precision, but the effort is to make them adequate for the scale adopted and they are far superior to all previous mapping of these regions.

THE SWEDISH EXPEDITION TO TIERRA DEL FUEGO.—Dr. Otto Nordenskiöld, leader of the Swedish Expedition which went to Tierra del Fuego in 1895, has sent to *Annales de Géographie* (No. 21, April, 1896) some information about the progress of his party, writing from Punta Arenas on Feb. 23, 1896. Dr. Nordenskiöld is geologist, Dr. Ohlin, zoologist, and Mr. Dusén, botanist of the party. After outfitting at Buenos Ayres they left, early in November last, for Punta Arenas on the north side of the Straits of Magellan. Dr. Ohlin has since made that town his headquarters and has been engaged in the study of the marine fauna of the Straits and the coast waters as far as Cape Horn. When Dr. Nordenskiöld wrote, he and Mr. Dusén had just returned from a trip

in the northern and central parts of Tierra del Fuego. Its coasts are now very well known and are inhabited to a considerable extent, but the interior has been completely traversed only by the Commission which delimited the boundary between Chile and Argentina.

Starting on horses from the mouth of the Rio Grande, the largest river of the island, the explorers ascended an affluent of that river, the route being, in the main, parallel with the boundary line and about thirty miles east of it. In about $54^{\circ} 25'$ S. latitude they saw from a height Lake Fagnano, which was discovered by the Boundary Commission, and which is said to be nearly sixty miles long. The way south to the lake was open, but as Dr. Nordenskiöld intended to reach it from Admiralty Sound and to study the Cordilleras from that point of approach, he did not continue his inland journey further south.

While the northern coast region is dissected by numerous valleys this feature of denudation is not at all so conspicuous in the interior, the plain being low and often marshy as far west as the Cordilleras and drained by small streams without noteworthy valleys. South of the Rio Grande the country is forest covered, but is everywhere penetrable. Morainic material overspreads tertiary deposits and is itself covered with gravel, probably of former stream beds. Evidences of a post-glacial uplift of from seventy to a hundred feet were observed on the west side of the traversed region. The Straits of Magellan form, only in some special instances, a zoological and botanical boundary. Dr. Nordenskiöld expected to remain on the island until the beginning of the Antarctic winter.

TOPOGRAPHICAL MAPS IN GEOGRAPHY CLASSES.—The Conference on Geography in 1892 emphasized the importance of placing good topographical maps in the hands of students. A committee of the Conference made a valuable report on "Governmental Maps for use in Schools," describing over fifty phases of topographical relief that are well illustrated by maps, which may be obtained free or for a nominal sum. In the four States whose topographical maps have been completed, the sheets may be used with much advantage in the study of local and State geography. Inquiries addressed by the Society to the Boards of Education in these States have elicited the following information:

In Massachusetts the students in the normal schools are now receiving some training of a nature to enable them, as teachers, to illustrate the physiographic side of geography by the use of the map sheets. Such instruction is also given to some extent in the

high schools. A copy of the State map (fifty-four sheets) was given in 1895 to each of the high and normal schools. It is not supplied to the grammar schools.

Rhode Island is just publishing a monograph by William M. Davis, Professor of Physical Geography in Harvard University, with the design of aiding teachers to use the map sheets advantageously in the class-room and in outdoor study. Instruction to this end is also given in the normal but not in the high schools. The State distributes the map (twelve sheets) free to all the public schools and libraries. The map is not yet used to any extent in the grammar and high schools.

Connecticut does not distribute the State map (thirty-three sheets) free of charge. There is beginning to be some demand for it from the public schools, and students in the normal schools receive some instruction in physiography, but little or nothing is yet done in this line in the high schools. The State has printed and will supply to teachers a pamphlet of fourteen pages by Professor William M. Davis, entitled "The State Map of Connecticut as an Aid to the Study of Geography in Grammar and High Schools." The pamphlet deals chiefly with the manner in which the forms of land and water, soils, climate, etc., and sources of power such as coal, water-falls, etc., in their relation to the occupation of the earth by man, may be brought more clearly to the understanding of young scholars by the aid of the State map. This little work is a timely and much needed Aid for teachers, abounding, as it does, in suggestions for the more scientific teaching of geography. The Connecticut Normal schools, next season, will give instruction in the line indicated by this pamphlet.

New Jersey has distributed her map (twenty sheets) to all the public schools. It includes a general map of the State, a relief map indicating altitudes by shading, and a geological map.

EUROPE.

THE DANUBE SHIP CANAL.—The lower Danube is about to be opened to navigation by large boats by the completion of the ship canal at the Iron Gates. For forty years the passage of the Iron Gates, at all times difficult and dangerous, has been impracticable for an average of 117 out of the 275 days of navigation in the year, for boats drawing five feet, and at no time has the river been navigable between Bazias and the Iron Gates, eighty miles further down the river, for boats drawing more than six feet. The interruptions begin just below Bazias, where the Danube quits the Hungarian

plain, and in the succeeding eighty miles to the Iron Gates the bed of the river cuts in several places almost at right angles across the strike of beds of crystalline schists and granites, creating rapids and rocky shoals. Finally the channel is barred by the Prigada reef, a wall over 350 yards wide, emerging above the surface at low water, running near the left bank for over a mile and then crossing diagonally to the right, just above Sibb. This wall, with smaller reefs, constitutes the Iron Gates proper, and has formed a dangerous cataract throughout its entire length. The obstructions between Bazias and the Iron Gate have been removed and a canal has been excavated through the Prigada and other reefs of the Iron Gate, along the southern or Servian side of the river. The canal is about two miles long, 260 feet wide and ten feet deep, and the Danube will now be navigable for the largest river steamers from Vienna to the Black Sea. The formal opening to traffic will occur on September 27, and the occasion will be a feature of the Hungarian Millennium festival.

ORIGIN OF THE BALTIC SEA.—The *Geographical Journal* for April prints a summary of a paper read at Lübeck, last year, by Professor Rudolf Credner on the origin and evolution of the Baltic Sea. The present condition of the Baltic is merely a stage in its evolution, and Professor Credner refers to the gradual changes in its coast line which are continuously in progress. The cause of the depression, now occupied by the sea, was a movement of the crust which, by a series of faults, let down a portion of the surface consisting of different geological series. The basin thus formed has been greatly modified by processes of erosion and accumulation, largely the result of ice action. Thus the main features of the Baltic were blocked out and then many striking features were brought about by gradual elevation and depression, as is shown by the evidence of the marine fauna, which was at one time that of salt water, then of brackish water, and again of fresh water; and so the changes went on as the rising or falling of the crust brought the general depression more freely into communication with the outer ocean or restricted or completely cut off its outlet. Observations on the Scandinavian and Finnish coasts seem to prove that the present is a period of slow elevation.

THE GEOLOGICAL EXPEDITION TO NOVAYA ZEMLYA.—M. Th. Chernyshev reported to the Russian Geographical Society on January 2, on the geological expedition to Novaya Zemlya last sum-

mer. The *Geographical Journal* says that the expedition, which left Archangel on July 22, landed at Matochkin Shar, the strait separating the two large islands, eight days later, explored its coasts and entered the strait, but its eastern end was ice-blocked and the steamer *Vladimir*, therefore, could not reach the Kara Sea at that place. The party, using sledges, crossed Novaya Zemlya in six days in the latitude of Little Karmakuly settlement, reaching the Kara Sea at Abrosimov Bay. Proofs were found of the glaciation of the land during the ice age and of the secular elevation, at least of the southern island, during recent times. Some geographical positions were fixed and the expedition returned to Archangel on September 21 with rich geological collections.

PROTECTING SCHLESWIG'S WEST COAST.—The Hallig Islands off the west coast of Schleswig protect that coast to a large extent from the destructive force of ocean storms. But some of the smaller of these islands have been damaged and are liable to be destroyed by violent storms. *Petermanns Mitteilungen* (1896, part II.) says the Prussian government has decided to build a dike of piles and bushwork around Oland, Gröde and Appeland to be connected by an embankment with the mainland, on the east, and also with the island of Langeness on the west.

AFRICA.

THE EAST AFRICAN DWARFS.—In Dr. A. Donaldson Smith's address before the American Geographical Society on April 13, on his sixteen months' journey, in 1894-95, among the Somalis and Gallas, from the Gulf of Aden southwestward to the salt lake Stephanie and Lake Rudolf, near the eastern limits of the Upper Nile basin, he alluded to his visit to a dwarf tribe living north of Lake Stephanie. In fact he is the only explorer who has seen any of the East African dwarfs in their home, though there has been undoubted evidence of their existence. Dr. Smith has supplied the following facts about the tribe he visited:

"The Dume pigmies inhabit a mountainous tract of country only five miles square and lying twenty-five miles north of Lake Stephanie. I did not have a chance to see much of them as I had to push on to Rudolf, but I do not think they number over 1,200 souls all told. They live in little hamlets composed of about thirty huts each, the huts being made simply of grass and weeds, roughly tied and thrown over bent sticks.

"The Dume have been conquered by a neighboring tribe to the

South called the Burle and are so hemmed in by different tribes on all sides that they have been unable to procure a living by hunting and have been obliged to raise goats and even to till the ground. They go absolutely naked, not even wearing sandals. Their average height is about five feet. They are quite black, but with a very slight copper tint in some cases. They are very well formed, but with negroid features. They have woolly hair and are uncircumcised. They still hunt elephants with poisoned arrows, but game is not abundant. They appear to have no idea of morality, but most of the men take a permanent concubine so as to raise a family they may call their own after they get well on in life.

"There is a tribe called the Bunno living just west of the Dume, two-thirds of whom are also undersized and they are undoubtedly related to the Dume, but intermarriage with other tribes has increased the size of many. I believe all the country north of the two lakes was formerly peopled by pigmies, as I saw so many undersized men and women among the Mela, a tribe I visited eighty miles north of Rudolf, among the Amar, a tribe west of Stephanie, and among several other tribes about these regions, besides the Dume and Bunno. It is probable that they are all degenerate species, except the Dume, who are of uniform size, but even they do not come down to the size of Stanley's pigmies,—four and a half feet. I collected a few words of the Dume language, which I shall publish in the appendix of a book I am writing, and which will be published next autumn."

Dr. Henry Schlichter of the British Museum collated (*Scottish Geographical Magazine*, 1892, June and July) all the reports about East African dwarfs with a view to answering the vexed question: "Do pigmy tribes exist in East Africa, and if so, where?" He made a careful summary of these reports and the evidence he adduced was conclusive proof of the existence of these dwarfs. He found that as far back as 1826 Captain Boteler had brought information about the East African dwarfs, and that when travelling in Abyssinia, Shoa and Kaffa, Messrs. Harris, Krapf, d'Abbadie and Hartmann had heard much of the existence of pigmies in the unexplored country just a little south; and that Avanchers, Krapf and d'Abbadie saw numbers of these dwarfs, though not in their habitat.

The evidence Dr. Schlichter adduced seemed to justify the conclusion that there were dwarf tribes living near the southern border of Kaffa, the southernmost part of Abyssinia, and in the neighborhood of the thirty-sixth meridian east of Greenwich, and the habitat of the Dume is near that meridian. The Teleki expedition

which discovered Lake Stephanie (1888) did not penetrate quite far enough north to discover the Dume. It was supposed that one of these dwarf tribes was called the Doko, but Dr. Smith met this word only among the Galla people and it means "a poor man."

DESICCATION OF CENTRAL AFRICAN LAKES.—Mr. Alfred Sharpe in the *Geographical Journal* (1896, April) says that with the exception of the Shire River (outlet of Lake Nyassa), Luapula and Chambezi (eastern Congo sources), and the Loangwa (northern tributary of the Zambesi), he knows of no other rivers of British Central Africa that are navigable for any important distance. He inclines to the theory now most commonly accepted, that the gradual desiccation of Central African lakes, observable for some years past, will not be a persistent phenomenon, as some theorists have believed, but that it is merely one phase of the results of meteorological conditions not yet understood; that is, that there are succeeding cycles of rising or falling waters in these African lakes, due to increasing or decreasing rainfall. The evidence we have of the various levels of Tanganyika's surface since Burton's time tends strongly to support this conclusion. Some of the lakes also are silting up, as Lake Mweru, whose southern end is being filled with detrital deposits from the Luapula River, and great marshes there were formerly a part of the lake. Recent unusually dry years have allowed vegetation to get a hold on the shallow muddy bottoms of lakes Shirwa and Pamalombe (near the southern end of Nyassa) and are now converting them into marshes. Lake Bangweolo appears to be filling up in the same manner, at least at its southern end. There has not been much recent change in the level of Lake Nyassa, though a slight fall of level is indicated by the somewhat shallower Shire River, where the Nyassa waters enter it.

In the northern part of Nyassa, where the coasts are bordered by high mountains, Lieut. Gurney has recently made a line of soundings where no bottom was found at 1,800 feet, the length of his wire. Between these highlands, therefore, is found an unusual depression, the bottom of the lake being certainly more than 300 feet below the level of the sea, as its surface is 1,500 feet above it.

Mr. W. H. Nutt, whose account of his journey to Lake Rutwa, east of the southern part of Lake Tanganyika, in 1894, appeared in the *British Central Africa Gazette* (Oct. 15 and Nov. 1, 1895), likens the lake to a gigantic mud hole. The lake is very shallow for some distance from the shore, appears to be shrinking both in

its northern and southern parts, and apparently receives few important feeders. The large evaporation caused by the burning tropical sun is at present certainly larger than the water receipts.

WILL THE AFRICAN NATIVES WORK FOR HIRE?—Mr. Alfred Sharpe, in his paper in the *Geographical Journal* (1896, April), says, the theory that the negro in tropical Africa cannot be induced to work regularly, except by force, is completely contrary to experience in the Shire Highlands, Lake Nyassa. At first there is a scarcity of native labor until the natives gain confidence in the new settlers. Then there is a flocking in of persons who desire to work. After a time many begin to acquire trades, such as carpentry, brickmaking and bricklaying, or learn skilled work such as timber sawing, overseeing, bullock driving and so on. The brighter men see that such occupations involve less hard work and command higher wages than mere unskilled labor. The news spreads that calico and other highly prized articles may be earned, and every year natives come in from more distant districts to obtain unskilled work.

These persons agree to work for six months, and at the end of that period they go home to till their land and use their earnings. At Blantyre the same men return again and again in succeeding years. So far from there being a scarcity of labor in these regions, more laborers at times come to Blantyre for work than can well be utilized. The natives are now living in better houses, they clothe themselves in calico and prints instead of in bark cloth and skins, they have founded permanent settlements around the white stations, native agriculture has increased and some natives in the Blantyre and Zomba districts are now cultivating coffee and wheat. Large numbers of children attend the schools and many can now read and write.

THE CONGO RAILROAD.—After a year spent in preliminary studies for the Congo railroad, before work was begun, the engineers reported that it might be built for \$5,000,000. The commission which has recently inquired into the present condition and prospects of the work has reported that the total cost will be from \$12,000,000 to \$13,000,000, according to the time taken to finish it. This illustrates again the general rule that the cost of large engineering works, involving new problems, or carried out in new countries, is likely to be greatly underestimated at first.

In May the Belgian parliament voted an immediate loan of

\$1,000,000 and guaranteed a further loan of \$2,000,000, which practically insures the success of the enterprise. *Le Mouvement Géographique* (Nos. 9 and 13, 1896) says the line was open to Kimpesse, about 100 miles from its starting point at Matadi, and it was expected to complete it to Tumba, 116 miles, before August 1. This is about half way to Stanley Pool, and the engineering works still to be carried out are not of a difficult nature. The commission has reported favorably on the condition of the part of the line now open, and the progress making. The line should be completed, it is thought, by 1900.

AN AMERICAN NATURALIST IN AFRICA.—Mr. D. G. Elliot, the American naturalist, left London for Somaliland on March 27 to obtain a series of antelopes and other large African mammals for the Field Columbian Museum of Chicago. From Berbera, on the Gulf of Aden, he expected to travel southward over the high plateau to the Shebeyli River, where he hoped to find giraffes and Grévy's zebras. He will try to return to the coast by the valley of the Jub River, where he will look for the newly-described Hunter's antelope (*Damaliscus hunteri*). Besides his native party he has with him a London taxidermist and Mr. Dobson, who accompanied Dr. A. Donaldson Smith in his recent expedition to Lake Rudolf.

MOUNT KENIA.—The GEOGRAPHICAL JOURNAL for May has a brief letter from the British agent at Zanzibar reporting that Dr. Kolb, a former member of the ill-fated Freeland Expedition into East Africa, has returned from Mount Kenia and asserts that he has ascended it to its summit, from the upper waters of the Tana. The letter contains no particulars of the ascent nor information concerning the mountain, which is believed to be the second highest in Africa. Dr. Kolb says the people who inhabit and cultivate the slopes of Kenia have no common tribal name or government and are quite distinct from the tribes at the base, though speaking a dialect resembling that of the Wakamba.

THE FUTURE OF ERITREA.—Baron L. Franchetti's lecture before the Second Italian Geographical Congress on the development of Italy's Colony on the Red Sea (*Scottish Geographical Magazine*, April, 1896) has scant praise for Massowah, the port, and its neighboring lowlands, which as yet offer few opportunities for trade or agriculture. The plateau, however, with a mean elevation of 6,500 feet, has a mild and healthful climate, a large proportion of cul-

tivable lands and abundance of water. Cereal and leguminous plants, the vine, olive and other fruits thrive, and agriculture may profitably be carried on. Ten peasant families went to Eritrea from Italy in 1893, each receiving fifty acres of land in the neighborhood of Godofelassi, which has an Italian garrison. Between November, 1893, and July, 1894, each family had cleared fifteen to twenty acres, planted them and the crops promised well. Little outcome can be expected from the lowlands between the plateau and the sea.

ASIA.

PROGRESS IN JAPAN.—Mr. James Troup, British consul at Yokohama, in a paper read before the Scottish Geographical Society in February last, said that although China proper has a population eight or ten times as large as that of Japan, her foreign trade through the open ports does not amount to twice that of Japan. In order to develop the Japanese merchant marine on European models, the government, in 1887, prohibited the building of junks of over ninety tons burden. Japan now owns 517 merchant steam vessels, of which 102 are ocean-going steamers. Japanese companies have established steamship lines from home ports to Shanghai, Korean ports and Vladivostock, and to Bombay; and vessels trade to other ports in the East. Inland transport has been greatly improved by the development of the railroad system. Considerably over 2,000 miles of railroads are now open to traffic, and extensions, now proceeding, will increase the mileage to about 3,000 miles. The industrial development is proceeding apace. The opening of the ports gave an immense stimulus to the production of silk, about half of which is consumed in the country, while the silk export is now worth about \$22,500,000 a year. Mr. Troup also showed the impetus that had been given to the cultivation of tea, rice and other agricultural products, and to the mineral, timber and marine industries.

The people are better clad than they were thirty years ago, the uniforms of the army and navy and of civil functionaries have been remodelled in the Western fashion, and the attire of a very great many persons has been similarly changed. The ordinary population continue to clothe themselves mostly in cotton in the old style of dress. The use of goods from the West has inspired the Japanese with a desire to make similar articles for themselves. Considerable attention has recently been drawn to the fact that Japan may become more and more a competitor in supplying the Occident with

goods that heretofore have been manufactured mainly in Europe or America. But Mr. Troup does not think the conditions for competing with the West are so favorable in Japan as they seemed to be a year ago. Food and labor are rising in price and the dearth of labor during the recent war seems to be now accentuated by emigration to Formosa; but in time, Japan is likely to largely supply herself at home with the textile fabrics and the machinery she now imports.

SIBERIAN RIVER SURVEYS IN 1895.—The Russian *Official Messenger* reports that the Siberian hydrographic expedition, last summer, under Colonel Vilkitzki and Lieutenant Ivanoff, was very successful. The expedition left Yeniseisk on June 25, explored the unsurveyed parts of the lower Yenisei, surveyed the eastern shores of Ob Bay, which had been very imperfectly mapped, reached Obdorsk, which is now becoming the centre of the whole region, next entered the Irtysh and went to Tobolsk. Next year the exploration of the Ob will be resumed. The explorers say that the difference between high and low water in the Yenisei, which is nearly three fathoms at Yeniseisk, decreases in its lower course and ceases to be felt in the Brekhovskiye Archipelago. The current, which is five knots an hour in the narrow upper parts of the river, decreases to three-fourths of a knot in its lower course. The lower river may be navigated as far as Turukhansk, 670 miles, without a pilot. With a pilot vessels drawing 21 feet may navigate as far as the rapids, 1,000 miles from the mouth, and in the spring, there is a four-fathom depth nearly up to Yeniseisk. The shoals are wholly along the shores and are now well mapped.

The most important discovery made was that Ob Bay is not so wide as it is shown on the map, and has not the straight direction it was supposed to have. Under 72° N. lat. the eastern coast of the bay suddenly bends to the west and runs for forty-five nautical miles westward. Under the 71st degree it turns eastward again and only then runs due south, the errors of the best maps in the position of the coast attaining as much as 30 to 35 nautical miles.

THE POLAR REGIONS.

MR. PEARY'S NEXT EXPEDITION TO GREENLAND.—About July 8, Civil Engineer R. E. Peary, U. S. N., will start on his fourth journey to Greenland. He will visit Cape York, Whale Sound and Cape Sabine to complete in some details the investigations that have so long engaged him. He may be able to extend his survey of

the coast line, already completed from Cape York to Cape Alexander, as far north as Littleton Island. He will also endeavor to enter Jones Sound, which has not been penetrated to any extent since Inglefield's voyage in 1852. If the ice conditions in Melville Bay are favorable he will secure the large meteorite on the north shore of that bay, which he was unable to bring home with him last year, though he secured two smaller specimens. This purpose, however, may not be attained unless he can place his vessel within convenient distance of the shore. He expects to add much material to the fine collections he has already brought home. Mr. Albert Operti, the artist, will go with him and will take casts of the Cape York natives for the purpose of making typical models. On the way home Mr. Peary will probably visit Cumberland Sound and spend a week in Hudson Strait.

Two parties of scientific men will take passage on Mr. Peary's ship and will land south of his field of work to pursue their own investigations. A party of four or five young men from Cornell University, headed by Mr. Ralph S. Tarr, the geologist, will go to the neighborhood of Devil's Thumb, Melville Bay, to make collections and geological and glacial researches. Prof. A. E. Burton, of the Massachusetts Institute of Technology, with four or five comrades, will be landed at Umanak Fiord, Southwest Greenland, where they will make pendulum observations and study glacial characteristics and movement. Both parties will return with Mr. Peary.

S. A. ANDREE'S BALLOON JOURNEY.—Mr. Andree, and his two companions, Mr. Nils Ekholm, the Swedish meteorologist, and Mr. Strindberg, expect to start on their air voyage from North-western Spitzbergen late in July or early in August, somewhat later than the date previously mentioned. Mr. Ekholm recently made a long statement in the Swedish press in which he said that the balloon cloth used had been put to the severest test and would sustain a pressure nearly twenty times as great as it would be subjected to, while the escape of hydrogen gas would be so small that the balloon might be supported in the air for a much longer period than the two weeks or less which, he believed, would be the time limit of the voyage.

Some expert aeronauts, as well as many meteorologists, do not share Mr. Andree's faith that the outcome will be fortunate. Herr A. Berson, who has made thirty-five balloon ascents, and who read a paper on "Geography and Ballooning" before the Berlin Gesell-

schaft für Erdkunde on January 7, expressed the opinion that Mr. Andree's expedition is the most hazardous ever undertaken by explorers, and that it has little chance of success. We know nothing of the region, he said, either on the Siberian or the American side, between the Pole and 70° N. latitude, a stretch of 1,350 miles. We know very little about the winds between Spitzbergen and the Pole, but it is apparent that the atmospheric circulation in the belt of moving depressions round the Pole cannot be favorable to a long balloon journey. Herr Berson added that he had found journeys of only 180 to 300 miles with balloons of a volume up to 160,000 cubic feet extremely difficult during rain or snow. He feared that Mr. Andree and his two companions would throw away their lives.

The effect, in decreasing the buoyancy of Mr. Andree's balloon, of his immense spread of cloth, in an atmosphere that is likely to be filled with snow or frost, remains to be tested. It will be remembered that when Mr. Peary was travelling at an altitude of 8,000 feet above the sea a stick stuck in the snow was often thickly covered with frost crystals, on the windward side, in a few minutes. Mr. Peary's wearisome experience with fog also suggests the possibility that Mr. Andree might drift clear across the Polar area without once catching a glimpse of land or the ice-covered sea.

The young Frenchmen, Bissanc and Hermite, planned to start in 1892 in a monster balloon for the North Pole, but the idea was so severely criticised that they did not make the attempt. They looked for encouragement to the Paris Aeronautic Society, but, at a meeting of that body, there was loud applause when the president advised the young men to give up the attempt and declared that there was not one chance in a thousand that such an enterprise could succeed.